

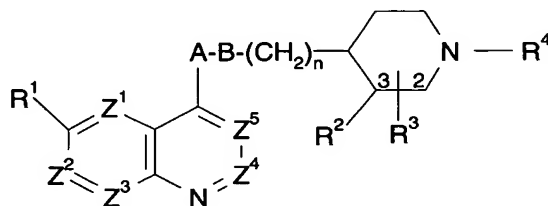
**Amendments to the claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of claims:**

Claims 1-12 (Cancelled).

13. (Currently Amended) A compound of formula (I) or a pharmaceutically acceptable salt, solvate and/or N-oxide thereof:



(I)

wherein:

one of Z<sup>1</sup>, Z<sup>2</sup>, and Z<sup>3</sup> is N and Z<sup>4</sup> and Z<sup>5</sup> ~~the remainder~~ are CH;

R<sup>1</sup> is hydrogen, hydroxy; (C<sub>1-6</sub>) alkoxy optionally substituted by (C<sub>1-6</sub>)alkoxy, amino, piperidyl, guanidino or amidino optionally N-substituted by one or two (C<sub>1-6</sub>)alkyl, acyl or (C<sub>1-6</sub>)alkylsulphonyl groups, NH<sub>2</sub>CO, hydroxy, thiol, (C<sub>1-6</sub>)alkylthio, heterocyclylthio, heterocyclyloxy, arylthio, aryloxy, acylthio, acyloxy or (C<sub>1-6</sub>)alkylsulphonyloxy; (C<sub>1-6</sub>)alkoxy-substituted (C<sub>1-6</sub>)alkyl; halogen; (C<sub>1-6</sub>)alkyl; (C<sub>1-6</sub>)alkylthio; nitro; trifluoromethyl; azido; acyl; acyloxy; acylthio; (C<sub>1-6</sub>)alkylsulphonyl; (C<sub>1-6</sub>)alkylsulphoxide; arylsulphonyl; arylsulphoxide or an amino, piperidyl, guanidino or amidino group optionally N-substituted by one or two (C<sub>1-6</sub>)alkyl, acyl or (C<sub>1-6</sub>)alkylsulphonyl groups;

either R<sup>2</sup> is hydrogen; and

R<sup>3</sup> is in the 2- or 3-position and is hydrogen or (C<sub>1-6</sub>)alkyl or (C<sub>2-6</sub>)alkenyl optionally substituted with 1 to 3 groups selected from:

thiol; halogen; (C<sub>1-6</sub>)alkylthio; trifluoromethyl; azido; (C<sub>1-6</sub>)alkoxycarbonyl; (C<sub>1-6</sub>)alkylcarbonyl; (C<sub>2-6</sub>)alkenyloxycarbonyl; (C<sub>2-6</sub>)alkenylcarbonyl; hydroxy optionally substituted by (C<sub>1-6</sub>)alkyl, (C<sub>2-6</sub>)alkenyl, (C<sub>1-6</sub>)alkoxycarbonyl, (C<sub>1-6</sub>)alkylcarbonyl, (C<sub>2-6</sub>)alkenyloxycarbonyl, (C<sub>2-6</sub>)alkenylcarbonyl or aminocarbonyl wherein the amino group is optionally substituted by (C<sub>1-6</sub>)alkyl, (C<sub>2-6</sub>)alkenyl, (C<sub>1-6</sub>)alkylcarbonyl or (C<sub>2-6</sub>)alkenylcarbonyl; amino optionally mono- or disubstituted by

(C<sub>1-6</sub>)alkoxycarbonyl, (C<sub>1-6</sub>)alkylcarbonyl, (C<sub>2-6</sub>)alkenyloxycarbonyl, (C<sub>2-6</sub>)alkenylcarbonyl, (C<sub>1-6</sub>)alkyl, (C<sub>2-6</sub>)alkenyl, (C<sub>1-6</sub>)alkylsulphonyl, (C<sub>2-6</sub>)alkenylsulphonyl or aminocarbonyl wherein the amino group is optionally substituted by (C<sub>1-6</sub>)alkyl or (C<sub>2-6</sub>)alkenyl; aminocarbonyl wherein the amino group is optionally mono- or disubstituted by (C<sub>1-6</sub>)alkyl, (C<sub>2-6</sub>)alkenyl, (C<sub>1-6</sub>)alkoxycarbonyl, (C<sub>1-6</sub>)alkylcarbonyl, (C<sub>2-6</sub>)alkenyloxycarbonyl or (C<sub>2-6</sub>)alkenylcarbonyl]; oxo; (C<sub>1-6</sub>)alkylsulphonyl; (C<sub>2-6</sub>)alkenylsulphonyl; or (C<sub>1-6</sub>)aminosulphonyl wherein the amino group is optionally substituted by (C<sub>1-6</sub>)alkyl or (C<sub>2-6</sub>)alkenyl; or

R<sup>3</sup> is in the 3-position and R<sup>2</sup> and R<sup>3</sup> together are a divalent residue =CR<sup>51</sup>R<sup>61</sup> where R<sup>51</sup> and R<sup>61</sup> are independently selected from H, (C<sub>1-6</sub>)alkyl, (C<sub>2-6</sub>)alkenyl, aryl(C<sub>1-6</sub>)alkyl and aryl(C<sub>2-6</sub>)alkenyl, any alkyl or alkenyl moiety being optionally substituted by 1 to 3 groups selected from those listed above for substituents on R<sup>3</sup>;

R<sup>4</sup> is a group -CH<sub>2</sub>-R<sup>5</sup> in which R<sup>5</sup> is selected from:

(C<sub>3-12</sub>)alkyl; hydroxy(C<sub>3-12</sub>)alkyl; (C<sub>1-12</sub>)alkoxy(C<sub>3-12</sub>)alkyl; (C<sub>1-12</sub>)alkanoyloxy(C<sub>3-12</sub>)alkyl; (C<sub>3-6</sub>)cycloalkyl(C<sub>3-12</sub>)alkyl; hydroxy-, (C<sub>1-12</sub>)alkoxy- or (C<sub>1-12</sub>)alkanoyloxy-(C<sub>3-6</sub>)cycloalkyl(C<sub>3-12</sub>)alkyl; cyano(C<sub>3-12</sub>)alkyl; (C<sub>2-12</sub>)alkenyl; (C<sub>2-12</sub>)alkynyl; tetrahydrofuryl; mono- or di-(C<sub>1-12</sub>)alkylamino(C<sub>3-12</sub>)alkyl; acylamino(C<sub>3-12</sub>)alkyl; (C<sub>1-12</sub>)alkyl- or acyl-aminocarbonyl(C<sub>3-12</sub>)alkyl; mono- or di- (C<sub>1-12</sub>)alkylamino(hydroxy) (C<sub>3-12</sub>)alkyl; optionally substituted phenyl(C<sub>1-2</sub>)alkyl, phenoxy(C<sub>1-2</sub>)alkyl or phenyl(hydroxy)(C<sub>1-2</sub>)alkyl; optionally substituted diphenyl(C<sub>1-2</sub>)alkyl; optionally substituted phenyl(C<sub>2-3</sub>)alkenyl; optionally substituted benzoyl or benzoylmethyl; optionally substituted heteroaryl(C<sub>1-2</sub>)alkyl; and optionally substituted heteroaroyl or heteroaroylmethyl;

n is 0, 1 or 2;

A is NR<sup>11</sup>, O, S(O)<sub>x</sub> or CR<sup>6</sup>R<sup>7</sup> and B is NR<sup>11</sup>, O, S(O)<sub>x</sub> or CR<sup>8</sup>R<sup>9</sup> where x is 0, 1 or 2 and wherein:

each of R<sup>6</sup> and R<sup>7</sup> R<sup>8</sup> and R<sup>9</sup> is independently selected from: H; thiol; (C<sub>1-6</sub>)alkylthio; halo; trifluoromethyl; azido; (C<sub>1-6</sub>)alkyl; (C<sub>2-6</sub>)alkenyl; (C<sub>1-6</sub>)alkoxycarbonyl; (C<sub>1-6</sub>)alkylcarbonyl; (C<sub>2-6</sub>)alkenyloxycarbonyl; (C<sub>2-6</sub>)alkenylcarbonyl; hydroxy, amino or aminocarbonyl optionally substituted as for corresponding substituents in R<sup>3</sup>; (C<sub>1-6</sub>)alkylsulphonyl; (C<sub>2-6</sub>)alkenylsulphonyl; or (C<sub>1-6</sub>)aminosulphonyl wherein the amino group is optionally substituted by (C<sub>1-6</sub>)alkyl or (C<sub>1-6</sub>)alkenyl;

or R<sup>6</sup> and R<sup>8</sup> together represent a bond and R<sup>7</sup> and R<sup>9</sup> are as above defined;  
or R<sup>6</sup> and R<sup>8</sup> together represent -O- and R<sup>7</sup> and R<sup>9</sup> are both hydrogen;  
or R<sup>6</sup> and R<sup>7</sup> or R<sup>8</sup> and R<sup>9</sup> together represent oxo;  
and each R<sup>11</sup> is independently H, trifluoromethyl, (C<sub>1-6</sub>)alkyl, (C<sub>1-6</sub>)alkenyl, (C<sub>1-6</sub>)alkoxycarbonyl, (C<sub>1-6</sub>)alkylcarbonyl, aminocarbonyl wherein the amino group is optionally mono- or di-substituted by (C<sub>1-6</sub>)alkoxycarbonyl, (C<sub>1-6</sub>)alkylcarbonyl, (C<sub>1-6</sub>)alkenyloxycarbonyl, (C<sub>2-6</sub>)alkenylcarbonyl, (C<sub>1-6</sub>)alkyl or (C<sub>1-6</sub>)alkenyl;

provided that A and B cannot both be selected from NR<sup>11</sup>, O and S(O)<sub>x</sub> and when one of A and B is CO the other is not CO, O or S(O)<sub>x</sub>.

14. (Previously presented) A compound according to claim 13 wherein Z<sup>1</sup> is N and Z<sup>2</sup>-Z<sup>5</sup> are each CH.

15. (Previously presented) A compound according to claim 13 wherein R<sup>1</sup> is methoxy, amino(C<sub>3-5</sub>)alkyloxy, guanidino(C<sub>3-5</sub>)alkyloxy or fluoro.

16. (Previously Presented) A compound according to claim 13 wherein R<sup>3</sup> is in the 3-position and is aminocarbonyl(C<sub>1-6</sub>)alkyl, hydroxy(C<sub>1-6</sub>)alkyl or 1,2-dihydroxy(C<sub>2-6</sub>)alkyl optionally substituted on the hydroxy group(s).

17. (Previously Presented) A compound according to claim 13 wherein AB is NHCO, NHCOCH<sub>2</sub> or CH<sub>2</sub>CH(OH)CH<sub>2</sub>.

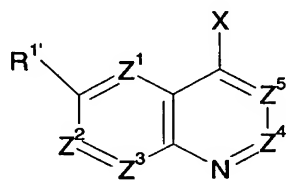
18. (Previously Presented) A compound according to claim 13 wherein R<sup>4</sup> is (C<sub>5-10</sub>)alkyl, unsubstituted phenyl(C<sub>2-3</sub>)alkyl or unsubstituted phenyl(C<sub>3-4</sub>)alkenyl.

19. (Currently Amended) A compound according to claim 13 selected from:  
1-Heptyl-4-(6-methoxy-1,5-naphthyridin-4-yl)aminocarbonyl piperidine;  
[3R, 4S]-1-Heptyl-3-ethenyl-4-N-(6-methoxy-1,5-naphthyridin-4-yl)-piperidineacetamide;  
[3R,4S]-1-Heptyl-3-ethenyl-4-[2-(R,S)-hydroxy-3-(6-methoxy-1,5-naphthyridin-4-yl)propyl]piperidine;  
[3R,4S]-1-Heptyl-4-N-(6-methoxy-1,5-naphthyridin-4-yl)-3,4-piperidinediacetamide;  
and  
[3R,4S]-1-Heptyl-4-N-(6-methoxy-1,5-naphthyridin-4-yl)-3-(1-(R/S)-2-dihydroxyethyl)-piperidineacetamide;

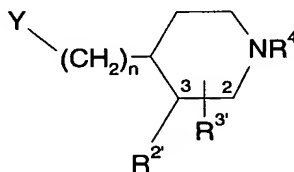
or a pharmaceutically acceptable salt, solvate, and/or N-oxide thereof of any of the foregoing compounds.

20. (Currently Amended) A process for preparing compounds of formula (I), or a pharmaceutically acceptable salt, solvate, and/or N-oxide thereof according to claim 13, which process comprises:

(a) reacting a compound of formula (IV) with a compound of formula (V):



(IV)



(V)

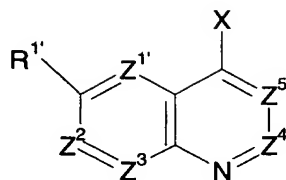
wherein Z<sup>1</sup>, Z<sup>2</sup>, Z<sup>3</sup>, Z<sup>4</sup> and Z<sup>5</sup>, m, n, R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup> are as defined in formula (I), and X and Y may be the following combinations:

- (i) X is M and Y is CH<sub>2</sub>CO<sub>2</sub>R<sup>X</sup>
- (ii) X is CO<sub>2</sub>R<sup>Y</sup> and Y is CH<sub>2</sub>CO<sub>2</sub>R<sup>X</sup>
- (iii) one of X and Y is CH=SPh<sub>2</sub> and the other is CHO
- (iv) X is CH<sub>3</sub> and Y is CHO
- (v) X is CH<sub>3</sub> and Y is CO<sub>2</sub>R<sup>X</sup>
- (vi) X is CH<sub>2</sub>CO<sub>2</sub>R<sup>Y</sup> and Y is CO<sub>2</sub>R<sup>X</sup>
- (vii) X is CH=PR<sup>Z</sup><sub>3</sub> and Y is CHO
- (viii) X is CHO and Y is CH=PR<sup>Z</sup><sub>3</sub>
- (ix) X is halogen and Y is CH=CH<sub>2</sub>
- (x) one of X and Y is COW and the other is NHR<sup>11'</sup>
- (xi) one of X and Y is (CH<sub>2</sub>)<sub>p</sub>-V and the other is (CH<sub>2</sub>)<sub>q</sub>NHR<sup>11'</sup>, (CH<sub>2</sub>)<sub>q</sub>OH, (CH<sub>2</sub>)<sub>q</sub>SH or (CH<sub>2</sub>)<sub>q</sub>SCOR<sup>X</sup> where p+q=1
- (xii) one of X and Y is CHO and the other is NHR<sup>11'</sup>
- (xiii) one of X and Y is OH and the other is -CH=N<sub>2</sub>

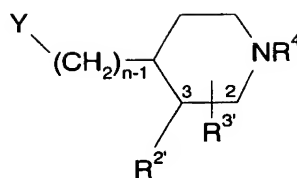
in which M is an alkali metal; V and W are leaving groups, R<sup>X</sup> and R<sup>Y</sup> are (C<sub>1-6</sub>)alkyl and R<sup>Z</sup> is aryl or (C<sub>1-6</sub>)alkyl;

or

(b) reacting a compound of formula (IV) with a compound of formula (Vb):



(IV)



(Vb)

wherein  $Z^1$ ,  $Z^2$ ,  $Z^3$ ,  $Z^4$  and  $Z^5$ ,  $m$ ,  $n$ ,  $R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$  are as defined in formula (I),  $X$  is  $CH_2NHR^{11'}$  and  $Y$  is  $CHO$  or  $COW$  or  $X$  is  $CH_2OH$  and  $Y$  is  $-CH=N_2$ ;

in which  $R^{11'}$ ,  $R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$  are  $R^{11}$ ,  $R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$  or groups convertible thereto, wherein  $R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$  are  $R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$  optionally containing hydroxyl protecting groups, or  $R^3$  is a carboxy ester containing group, or  $R^4$  is  $H$  or a protecting group,  $R^{11'}$  is  $R^{11}$ , and thereafter optionally or as necessary converting  $R^{11'}$ ,  $R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$  to  $R^{11}$ ,  $R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$ , converting A-B to other A-B, interconverting  $R^{11}$ ,  $R^1$ ,  $R^2$ ,  $R^3$  and/or  $R^4$  and forming a pharmaceutically acceptable salt, solvate, and/or N-oxide thereof.

21. (Currently Amended)) A pharmaceutical composition comprising a compound of formula (I) or a pharmaceutically acceptable salt, solvate, and/or N-oxide thereof according to claim 13, and a pharmaceutically acceptable carrier.

22. (Currently Amended) A method of treatment of bacterial infections in mammals, ~~particularly in man~~, which method comprises the administration to a mammal in need of such treatment of an effective amount of a compound of formula (I) or a pharmaceutically acceptable salt, solvate, and/or N-oxide thereof according to claim 13.

23. (Currently amended) A compound according to claim 15, wherein  $R^1$  is methoxy.